

# Lecture 2:

# Using TSO and ISPF

# How do we interact with z/OS?

## **TSO**

- Allows users to logon to z/OS and use a limited set of basic commands. This is sometimes called using TSO in its *native mode*.

## **ISPF**

- Provides a menu system for accessing many of the most commonly used z/OS functions.

# TSO overview

- Acronym for Time Sharing Option/Extensions (TSO/E)
- Allows users to create an interactive session with z/OS
- Provides a single-user logon capability and a basic command prompt interface to z/OS
- Most users work with TSO through its menu-driven interface, Interactive System Productivity Facility (ISPF)

# Using TSO commands in native mode

- Usually, ISPF provides the interface for TSO.
- However, TSO includes a limited set of basic commands independent of ISPF and other programs.
- Using TSO in this way is called using TSO in its **native mode**.
- When you logon to TSO, the z/OS system responds by displaying the **READY** prompt, and waits for input (similar to a DOS prompt).

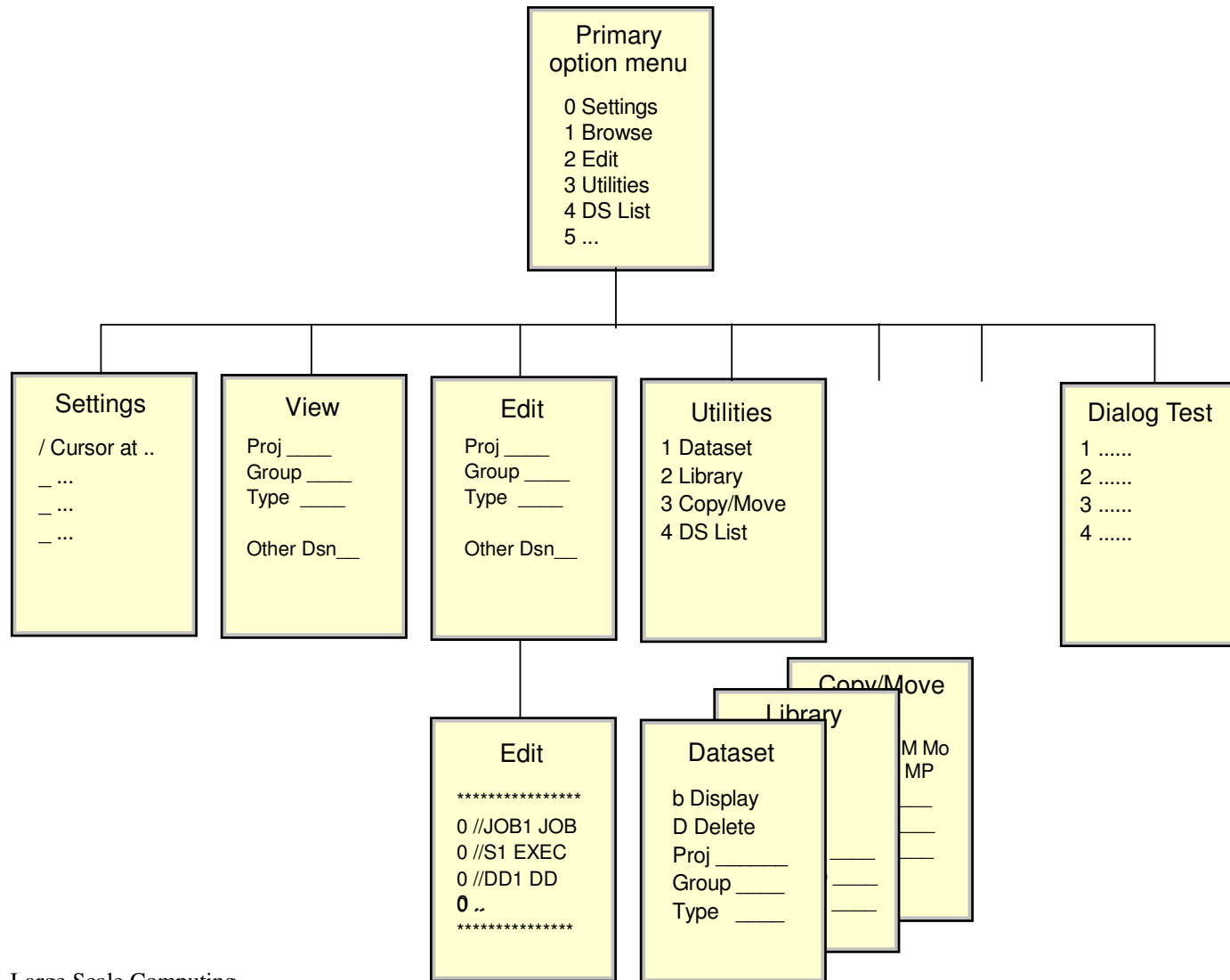


# ISPF

# Navigating through ISPF menus

- To access ISPF under TSO, the user enters a command (“ISPF”) from the READY prompt to display the **ISPF Primary Option Menu**.
- You can access online help from any of the ISPF panels (press the PF1 key)
- ISPF includes a text editor and browser, and functions for locating files and performing other utility functions.

# ISPF Menu Structure



# Keyboard mapping:

<u>Function</u>	<u>Key</u>
Enter	Ctrl (right side)
Exit, end, or return	PF3
Help	PF1
PA1 or Attention	Alt-Ins or Esc
PA2	Alt-Home
Cursor movement	Tab or Enter
Clear	Pause
Page up	PF7
Page down	PF8
Scroll left	PF10
Scroll right	PF11
Reset locked keyboard	Ctrl (left side)



# Primary Option Menu

**2**    Menu   Utilities   Compilers   Options   Status   Help

---

ISPF Primary Option Menu

<b>1</b>	<b>0</b> Settings      Terminal and user parameters <b>1</b> View          Display source data or listings <b>2</b> Edit          Create or change source data <b>3</b> Utilities      Perform utility functions <b>4</b> Foreground    Interactive language processing <b>5</b> Batch          Submit job for language processing <b>6</b> Command       Enter TSO or Workstation commands <b>7</b> Dialog Test    Perform dialog testing <b>9</b> IBM Products   IBM program development products <b>10</b> SCLM          SW Configuration Library Manager <b>11</b> Workplace     ISPF Object/Action Workplace	<b>3</b>
----------	---	----------

User ID . : USERID  
Time. . . : 13:54  
Terminal. : 3278  
Screen. . : 1  
Language. : ENGLISH  
Appl ID . : ISR  
TSO logon : ISPF  
TSO prefix: USERID  
System ID : ISD1  
MVS acct. : IBMGSA  
Release . : ISPF 5.5

Enter X to Terminate using Log/List defaults

Option ==>

F1=Help	F2=Split	F3=Exit	F7=Backward	F8=Forward	F9=Swap
F10=Actions	F12=Cancel				

Logon  
Procedure

Logon  
ID

**1** Primary Options

**2** Action Bar

**3** Dynamic Status Area

# Option 0

## ISPF Session Settings

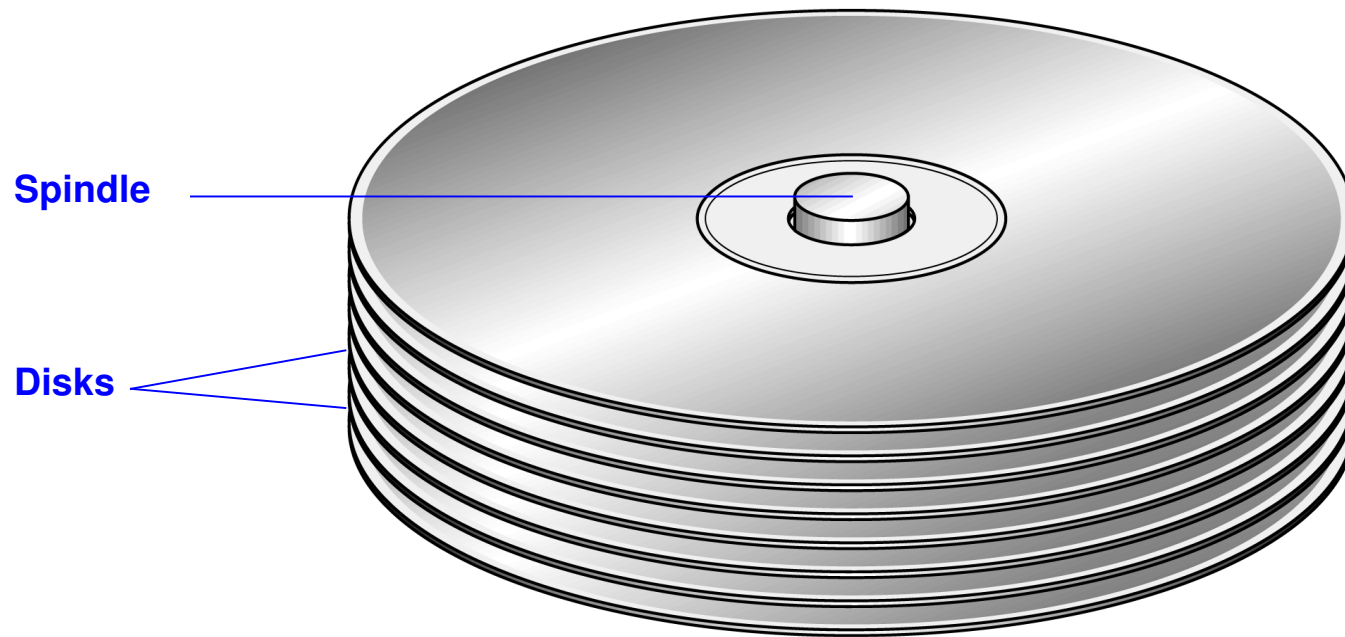
<u>Log/List</u>	<u>Function keys</u>	<u>Colors</u>	<u>Environ</u>	<u>Workstation</u>	<u>Identifier</u>	<u>Help</u>
ISPF Settings						
Options				Print Graphics		
Enter "/" to select option				Family printer type 2		
/ Command line at bottom				Device name . . . .		
/ Panel display CUA mode				Aspect ratio . . . 0		
- Long message in pop-up						
- Tab to action bar choices						
- Tab to point-and-shoot fields				General		
/ Restore TEST/TRACE options				Input field pad . . 8		
- Session Manager mode				Command delimiter . ;		
/ Jump from leader dots						
- Edit PRINTDS Command						
/ Always show split line						
- Enable EURO sign						
/ Scroll member list						
- Allow empty member list						
- Allow empty member list (nomatch)						
/ Empty member list for edit only						
Terminal Characteristics						
Screen format	2	1. Data	2. Std	3. Max	4. Part	
Terminal Type	3	1. 3277	2. 3277A	3. 3278	4. 3278A	
		5. 3290A	6. 3278T	7. 3278CF	8. 3277KN	
		9. 3278KN	10. 3278AR	11. 3278CY	12. 3278HN	
		13. 3278HO	14. 3278IS	15. 3278L2	16. BE163	
		17. BE190	18. 3278TH	19. 3278CU	20. DEU78	
		21. DEU78A	22. DEU78T	23. DEU90A	24. SW116	
		25. SW131	26. SW500	27. 3278GR		
Command ---->						
F1-HELP	F2-SPLIT	F3-END	F4-RETURN	F5-RFIND	F6-RCHANGE	
F7-UP	F8-DOWN	F9-SWAP	F10-LEFT	F11-RIGHT	F12-RETRIEVE	

# Basic Concepts for Allocating Datasets

## Using Option 3.1

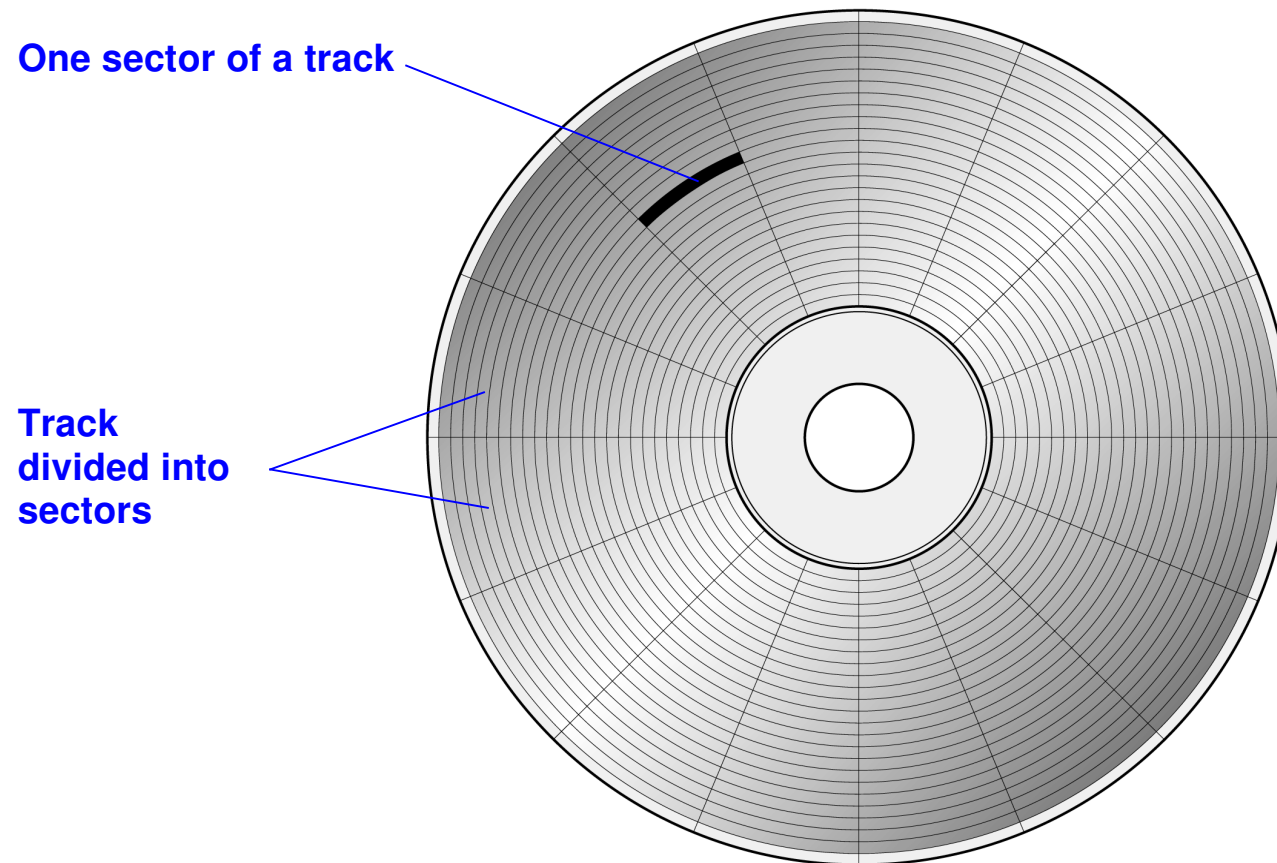
# Some Basic Terms

## The disks within a disk drive



# Some Basic Terms

## The tracks and sectors on one recording surface



## How data is stored on a disk drive

- A *disk drive* contains a stack of metal platters (or *disks*) that are coated with a metal oxide.
- Data is recorded on one or both sides of each disk in concentric circles called *tracks*.
- Each track is divided into *sectors*, and each sector has a unique *disk address*.
- When the disk drive reads or writes data, it reads or writes one or more complete sectors.
- When the disk drive is in operation, the disks rotate around the *spindle* at high speeds.

# Option 3

## UTILITIES

<u>M</u> enu <u>H</u> elp	
Utility Selection Panel	
1 Library	Compress or print data set. Print index listing. Print, rename, delete, browse, edit or view members
2 Data Set	Allocate, rename, delete, catalog, uncatalog, or display information of an entire data set
3 Move/Copy	Move, or copy members or data sets
4 Dslist	Print or display (to process) list of data set names. Print or display VTOC information
5 Reset	Reset statistics for members of ISPF library
6 Hardcopy	Initiate hardcopy output
7 Transfer	Download ISPF Client/Server or Transfer data set
8 Outlist	Display, delete, or print held job output
9 Commands	Create/change an application command table
11 Format	Format definition for formatted data Edit/Browse
12 SuperC	Compare data sets (Standard Dialog)
13 SuperCE	Compare data sets Extended (Extended Dialog)
14 Search-For	Search data sets for strings of data (Standard Dialog)
15 Search-ForE	Search data sets for strings of data Extended (Extended Dialog)
Option ==>	
F1=Help	F2=Split   F3=Exit   F7=Backward   F8=Forward   F9=Swap
F10=Actions	F12=Cancel



# The panel for working with sequential data sets

Mma - EXTRA! for Windows 98 / Windows NT

File Edit View Tools Session Options Help

Menu RefList Utilities Help

---

Option ==> A

Data Set Utility	Data set not cataloged
A Allocate new data set	C Catalog data set
R Rename entire data set	U Uncatalog data set
D Delete entire data set	S Short data set information
blank Data set information	V VSAM Utilities

ISPF Library:

Project . . MM01

Group . . . TEST

Type . . . . CNTL

Other Partitioned, Sequential or VSAM Data Set:

Data Set Name . . . 'MM01.CUSTMAST.DAT'

Volume Serial . . . (If not cataloged, required for option "C")

Data Set Password . . (If password protected)

. . . . .



# The panel for allocating a sequential data set

Mma - EXTRA! for Windows 98 / Windows NT

File Edit View Tools Session Options Help

Menu RefList Utilities Help

---

Allocate New Data Set

Command ===> \_\_\_\_\_

More: +

Data Set Name . . . : MM01.CUSTMAST.DAT

Management class . . . \_\_\_\_\_ (Blank for default management class)

Storage class . . . \_\_\_\_\_ (Blank for default storage class)

Volume serial . . . LIB7B9 (Blank for system default volume) \*\*

Device type . . . \_\_\_\_\_ (Generic unit or device address) \*\*

Data class . . . \_\_\_\_\_ (Blank for default data class)

Space units . . . TRACK (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS)

Average record unit \_\_\_\_\_ (M, K, or U)

Primary quantity . . 1 \_\_\_\_\_ (In above units)

Secondary quantity . 1 \_\_\_\_\_ (In above units)

Directory blocks . . 0 \_\_\_\_\_ (Zero for sequential data set) \*

Record format . . . FB \_\_\_\_\_

Record length . . . 43 \_\_\_\_\_

Block size . . . 2150 \_\_\_\_\_

Data set name type : \_\_\_\_\_ (LIBRARY, HFS, PDS, or blank) \*  
(YY/MM/DD, YYYY/MM/DD)

. . . . .

## How to create a sequential data set

- To allocate a new sequential data set, enter A in the command area, enter the data set name, and press the Enter key to display the Allocate New Data Set panel.
- In the Allocate New Data Set panel, specify 0 for the directory blocks, and leave the data set name type blank.
- To enter the data for a sequential file, you can use the ISPF editor.
- When you open a sequential file for the first time, be sure to enter the **NUM OFF** primary command so line numbers aren't added to the file.

# Option 3. 1

## UTILITIES

Menu	RefList	Utilities	Help
Library Utility			
blank Display member list	I Data set information	More: +	
C Compress data set	S Short data set information	B Browse member	
X Print index listing	E Edit member	D Delete member	
L Print entire data set	V View member	R Rename member	
		P Print member	
Enter "/" to select option			
/ Confirm Member Delete			
- Enhanced Member List			
ISPF Library:			
Project . . .	MYPROJ		
Group . . .	DEV		
Type . . .	SOURCE		
Member . . .		(If B, D, E, P, R, V, or blank selected)	
New name . .		(If R selected)	
Other Partitioned or Sequential Data Set:			
Data Set Name . . .			
Volume Serial . . .	(If not cataloged)		
Option ==>			
F1=Help	F2=Split	F3=Exit	F7=Backward F8=Forward F9=Swap
F10=Actions	F12=Cancel		

# The panel for working with partitioned data sets

The screenshot shows a window titled "Mma - EXTRA! for Windows 98 / Windows NT". The menu bar includes "File", "Edit", "View", "Tools", "Session", "Options", and "Help". Below the menu bar, the title "Data Set Utility" is centered. The main area contains the following text:

Option ==> **A**

---

A Allocate new data set	C Catalog data set
R Rename entire data set	U Uncatalog data set
D Delete entire data set	S Short data set information
blank Data set information	V VSAM Utilities

ISPF Library:

Project . . **MM01**

Group . . . **TEST**

Type . . . . **COBOL**

Other Partitioned, Sequential or VSAM Data Set:

Data Set Name . . . \_\_\_\_\_

Volume Serial . . . \_\_\_\_\_ (If not cataloged, required for option "C")

Data Set Password . . . (If password protected)

## Description

- To create a partitioned data set, or *library*, enter A in the command area; enter the Project, Group, and Type components of the data set name; and press Enter to display the Allocate New Data Set panel.

## The panel for allocating a partitioned data set

Mma - EXTRA! for Windows 98 / Windows NT

File Edit View Tools Session Options Help

Menu RefList Utilities Help

---

Allocate New Data Set

Command ==> \_\_\_\_\_

More: +

Data Set Name . . . : MM01.TEST.COBOL

Management class . . . \_\_\_\_\_ (Blank for default management class)

Storage class . . . \_\_\_\_\_ (Blank for default storage class)

Volume serial . . . . LIB788 (Blank for system default volume) \*\*

Device type . . . . \_\_\_\_\_ (Generic unit or device address) \*\*

Data class . . . . \_\_\_\_\_ (Blank for default data class)

Space units . . . . . TRACK (BLKS, TRKS, CYLS, KB, MB, BYTES or RECORDS)

Average record unit \_\_\_\_\_ (M, K, or U)

Primary quantity . . 5 \_\_\_\_\_ (In above units)

Secondary quantity . . 5 \_\_\_\_\_ (In above units)

Directory blocks . . 10 \_\_\_\_\_ (Zero for sequential data set) \*

Record format . . . . FB \_\_\_\_\_

Record length . . . . 80 \_\_\_\_\_

Block size . . . . . 3120 \_\_\_\_\_

Data set name type : PDS \_\_\_\_\_ (LIBRARY, HFS, PDS, or blank) \*

Expiration date . . . \_\_\_\_\_ (YY/MM/DD, YYYY/MM/DD or YY.DDD, YYYY.DDD in Julian form)

## Description

- To allocate a new data set, enter the appropriate information and press Enter.

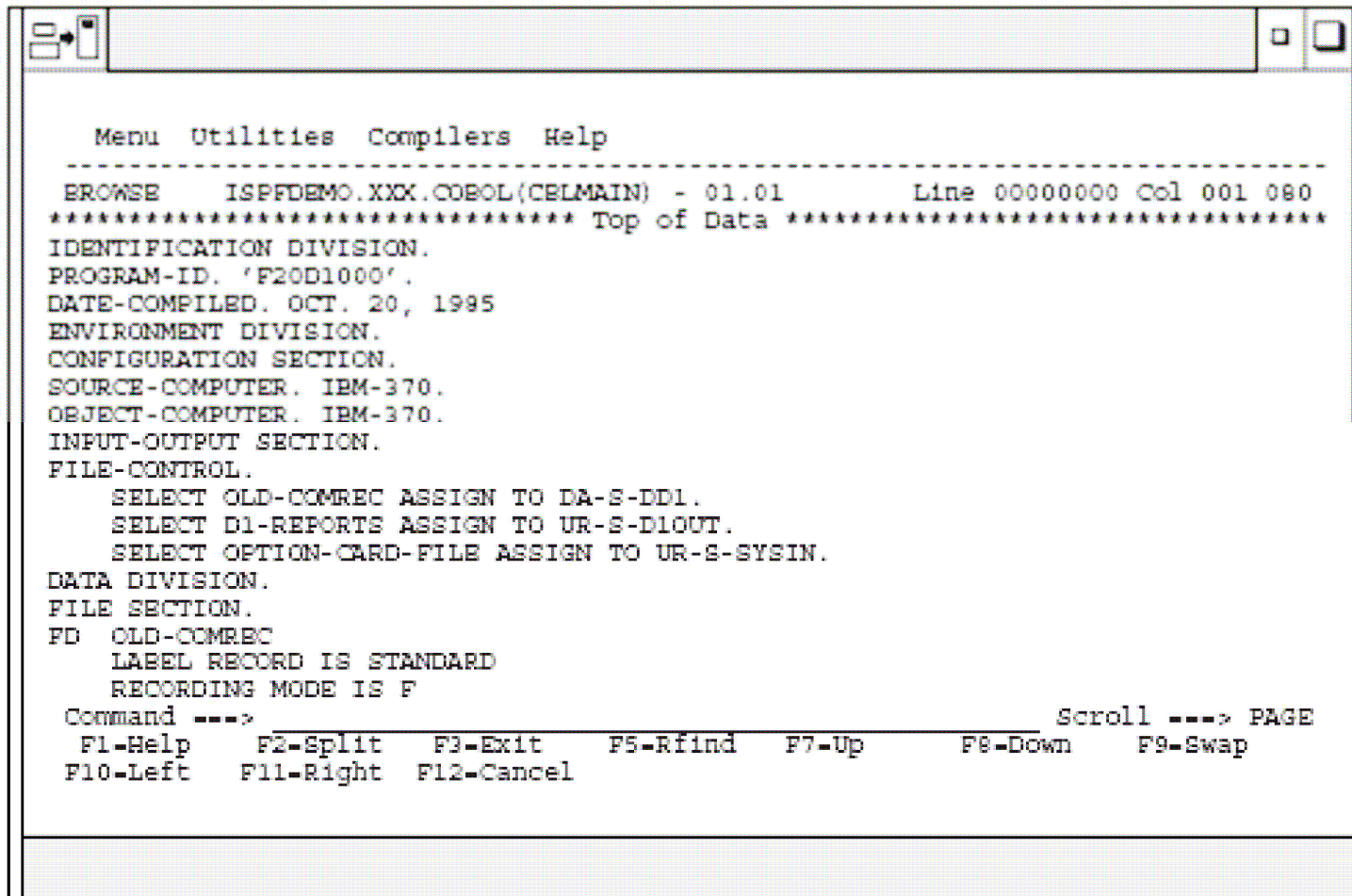
# Terminology for data files

- **Volume serial** - A six character name of a disk or tape volume, such as TEST01
- **Device type** - A model or type of disk device, such as 3390
- **Organization** - The method of processing a data set, such as sequential
- **Record format** - The data is stored in chunks called records, of either fixed or variable length
- **Record length** - The length (number of characters) in each record
- **Block size**- If records are joined together to save space, this specifies the length of the block in characters
- **Extent** - An allocation of space to hold the data. When the primary extent is filled, the operating system will automatically allocate more extents, called secondaries
- **Space** - Disk space is allocated in units called blocks, tracks, or cylinders

# ISPF Option 1 VIEW

<u>M</u> enu	<u>R</u> efList	<u>R</u> efMode	<u>U</u> tilities	<u>W</u> orkstation	<u>H</u> elp
View Entry Panel					
					More: +
ISPF Library:					
Project . . .	MYPROJ				
Group . . .	DEV	. . .	_____	. . .	_____
Type . . .	SOURCE				
Member . . .	_____	(Blank or pattern for member selection list)			
Other Partitioned, Sequential or VSAM Data Set:					
Data Set Name . . .	_____				
Volume Serial . . .	_____	(If not cataloged)			
Workstation File:					
File Name . . . . .	_____				
Options					
Initial Macro . . . . .	_____	- Confirm Cancel/Move/Replace			
Profile Name . . . . .	_____	- Browse Mode			
Format Name . . . . .	_____	- View on Workstation			
Data Set Password . .	_____	7 Warn on First Data Change			
Command --->					
F1-Help	F2-Split	F3-Exit	F7-Backward	F8-Forward	F9-Swap
F10-Actions	F12-Cancel				

# ISPF Option 1 VIEW



The screenshot shows the ISPF Option 1 VIEW screen. At the top, there is a menu bar with 'Menu Utilities Compilers Help'. Below the menu bar, the screen displays the following text:

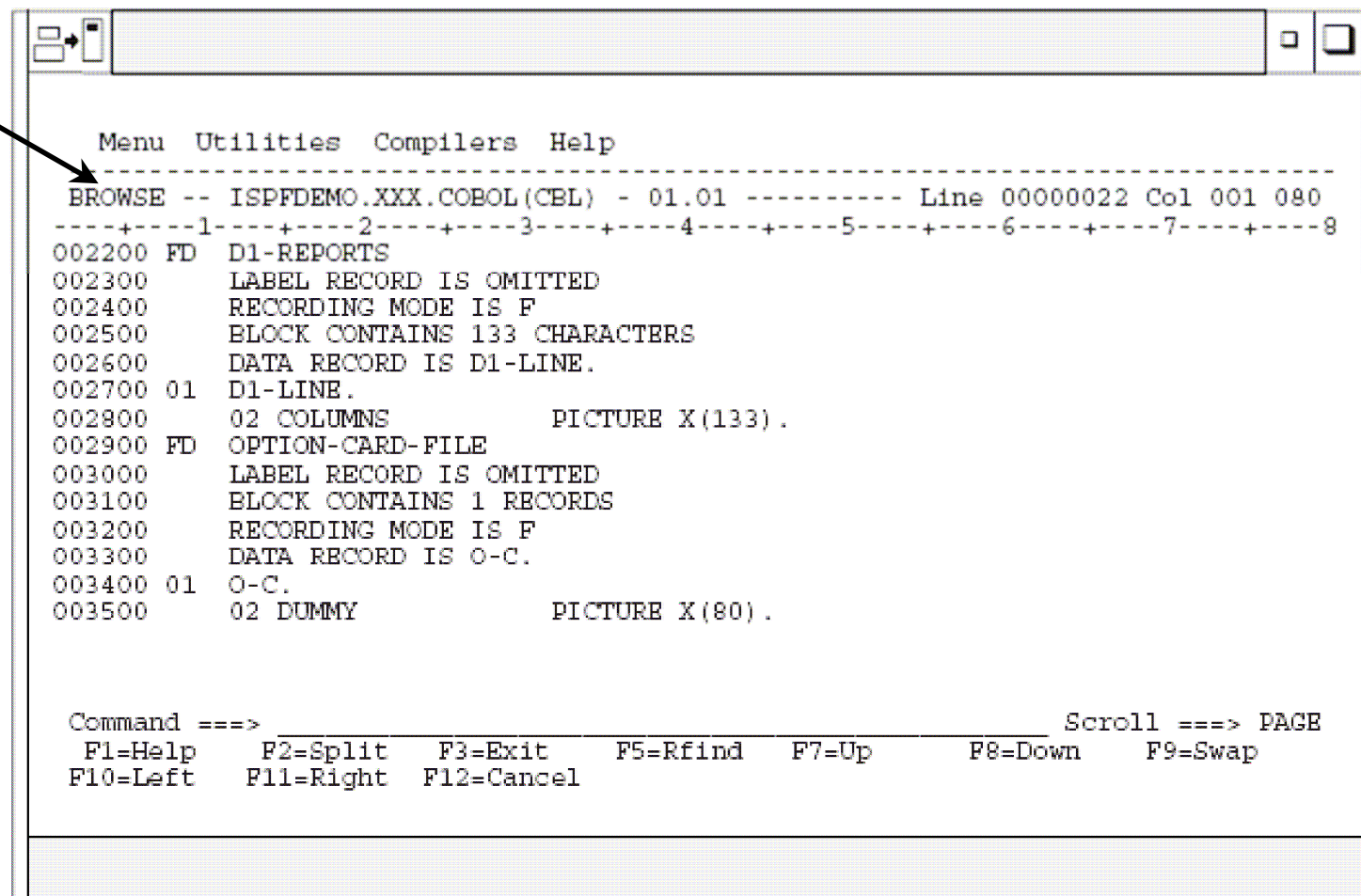
```
-----  
BROWSE      ISPFDEMO.XXX.COBOL(CBLMAIN)  - 01.01          Line 00000000 Col 001 080  
***** Top of Data *****  
IDENTIFICATION DIVISION.  
PROGRAM-ID. 'F20D1000'.  
DATE-COMPILED. OCT. 20, 1985  
ENVIRONMENT DIVISION.  
CONFIGURATION SECTION.  
SOURCE-COMPUTER. IBM-370.  
OBJECT-COMPUTER. IBM-370.  
INPUT-OUTPUT SECTION.  
FILE-CONTROL.  
    SELECT OLD-COMREC ASSIGN TO DA-S-DD1.  
    SELECT D1-REPORTS ASSIGN TO UR-S-D1OUT.  
    SELECT OPTION-CARD-FILE ASSIGN TO UR-S-SYSIN.  
DATA DIVISION.  
FILE SECTION.  
FD  OLD-COMREC  
    LABEL RECORD IS STANDARD  
    RECORDING MODE IS F  
Command ---->                                     Scroll ----> PAGE  
F1-Help      F2-Split    F3-Exit    F5-Rfind    F7-Up        F8-Down      F9-Swap  
F10-Left     F11-Right   F12-Cancel
```

## Browsing - data display



# ISPF Option 1 VIEW

COLS



```
Menu  Utilities  Compilers  Help
-----
BROWSE -- ISPFDEMO.XXX.COBOL(CBL) - 01.01 ----- Line 00000022 Col 001 080
-----+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----+-----7-----+-----8
002200 FD  D1-REPORTS
002300      LABEL RECORD IS OMITTED
002400      RECORDING MODE IS F
002500      BLOCK CONTAINS 133 CHARACTERS
002600      DATA RECORD IS D1-LINE.
002700 01  D1-LINE.
002800      02 COLUMNS          PICTURE X(133) .
002900 FD  OPTION-CARD-FILE
003000      LABEL RECORD IS OMITTED
003100      BLOCK CONTAINS 1 RECORDS
003200      RECORDING MODE IS F
003300      DATA RECORD IS O-C.
003400 01  O-C.
003500      02 DUMMY            PICTURE X(80) .

Command ==> _____ Scroll ==> PAGE
F1=Help   F2=Split  F3=Exit   F5=Rfind  F7=Up     F8=Down   F9=Swap
F10=Left  F11=Right  F12=Cancel
```

Place keyword COLS on the command line

# ISPF Option 1 VIEW

```
-----
                          View Entry Panel                      More
ISPF Library
  Project . . . _____
  Group   . . . _____ . . . _____ . . . _____
  Type    . . . _____
  Member  . . . _____ (Blank or pattern for member...)

Other Partitioned or Sequential Data Set
  Data Set Name . . _____
  Volume Serial . . _____ (If not cataloged)

Workstation File:
  File Name . . . _____

Initial Macro . . . _____
Profile Name   . . . _____
Format Name    . . . _____
Data Set Password . . _____

Command =====> _____
  F1=Help      F2=Split  F3=Exit  F7=Backward  F8=Forward  F9= Swap
  F10=Actions  F12=Cancel
```

# ISPF Option 1 VIEW


```
-----
                          View Entry Panel                      More
ISPF Library
  Project . . . _____
  Group . . . _____
  Type . . . _____
  Member . . . _____ (or pattern for member...)

Other Partitioned or
  Data Set Name . _____
  Volume Serial . _____ (cataloged)

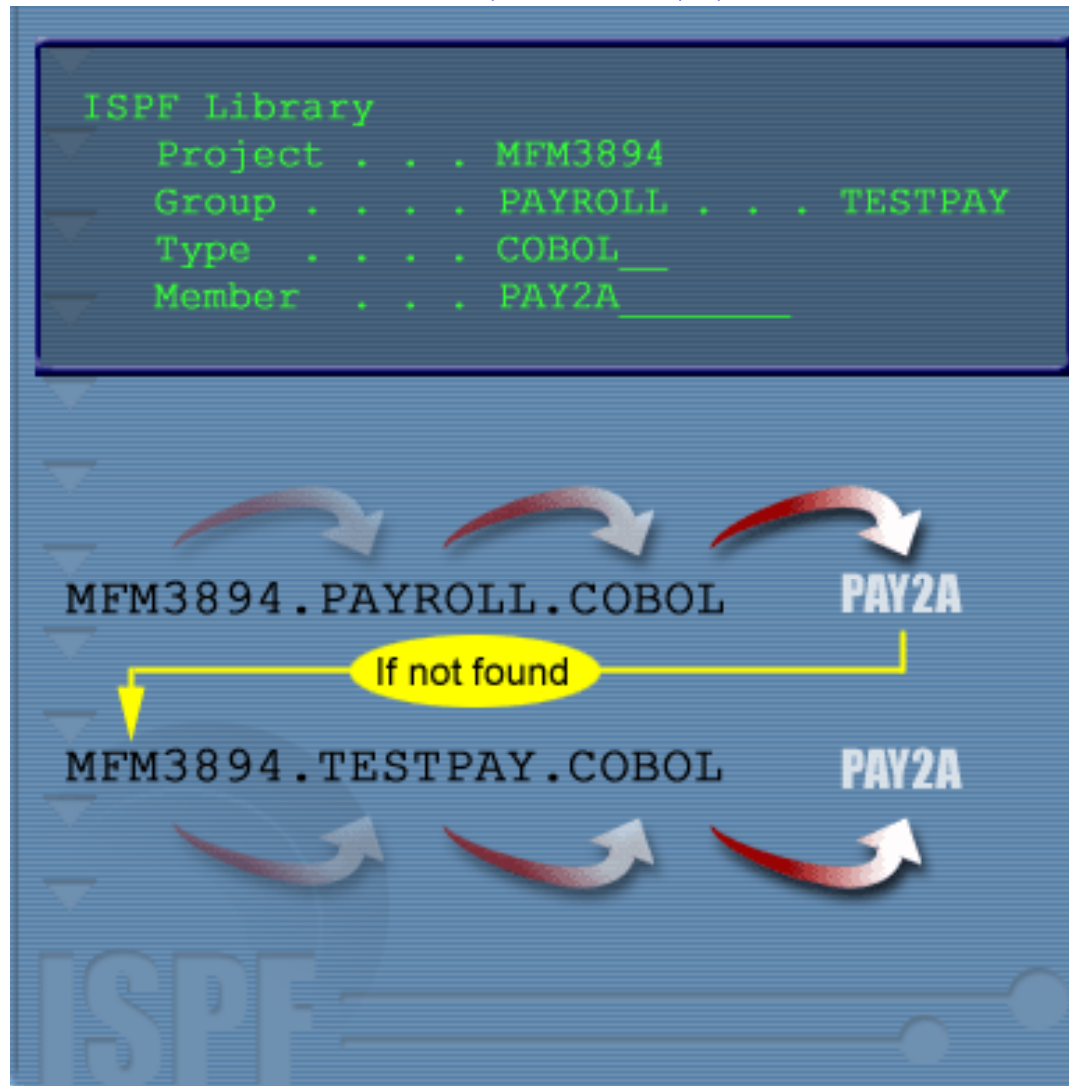
Workstation File:
  File Name . . . _____

Initial Macro . . . _____
Profile Name . . . _____
Format Name . . . _____
Data Set Password . . _____

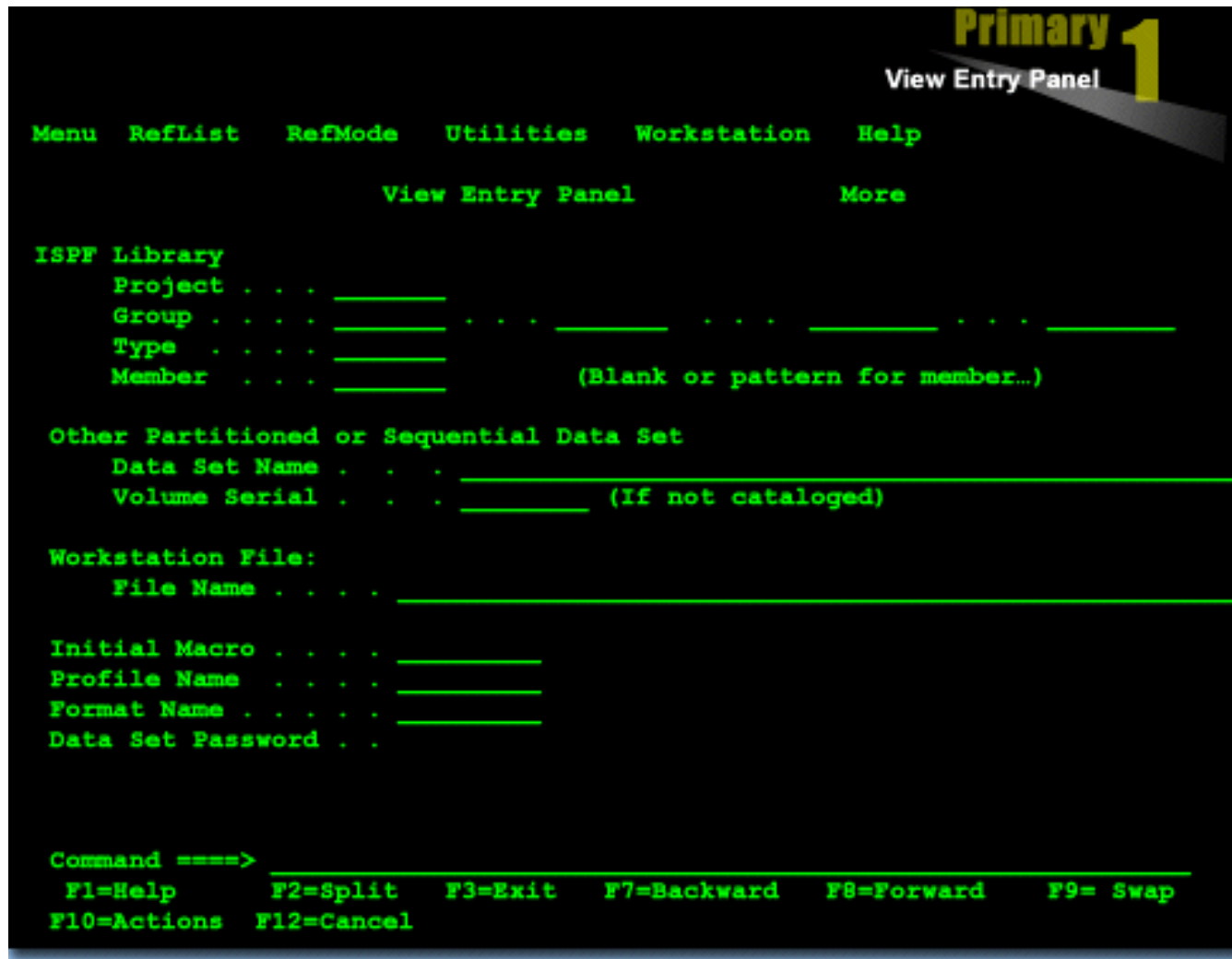
Command =====> _____
F1=Help      F2=Split  F3=Exit  F7=Backward  F8=Forward  F9= Swap
F10=Actions  F12=Cancel
```



# ISPF Option 1 VIEW



# ISPF Option 1 VIEW



The image shows a terminal window with a black background and green text. In the top right corner, there is a yellow banner with the word "Primary" in black and a large yellow number "1". Below this banner, the text "View Entry Panel" is displayed. The main menu consists of several options: "Menu", "RefList", "RefMode", "Utilities", "Workstation", and "Help". Below the menu, the title "View Entry Panel" is centered, followed by a "More" option. The "ISPF Library" section contains fields for "Project", "Group", "Type", and "Member", each followed by a series of dots and a line for input. A note "(Blank or pattern for member...)" is placed after the "Member" field. The "Other Partitioned or Sequential Data Set" section includes fields for "Data Set Name" and "Volume Serial", each followed by a line for input. A note "(If not cataloged)" is placed after the "Volume Serial" field. The "Workstation File:" section has a field for "File Name" followed by a line for input. The "Initial Macro", "Profile Name", "Format Name", and "Data Set Password" sections each have a field followed by a line for input. At the bottom, the "Command" section is labeled "====>" and followed by a line for input. Below the command line, there are two rows of function key definitions: "F1=Help", "F2=Split", "F3=Exit", "F7=Backward", "F8=Forward", "F9= Swap" in the first row, and "F10=Actions", "F12=Cancel" in the second row.

Primary 1  
View Entry Panel

Menu RefList RefMode Utilities Workstation Help

View Entry Panel More

ISPF Library  
Project . . . \_\_\_\_\_  
Group . . . . \_\_\_\_\_ . . . . \_\_\_\_\_ . . . . \_\_\_\_\_  
Type . . . . \_\_\_\_\_  
Member . . . . \_\_\_\_\_ (Blank or pattern for member...)

Other Partitioned or Sequential Data Set  
Data Set Name . . . . \_\_\_\_\_  
Volume Serial . . . . \_\_\_\_\_ (If not cataloged)

Workstation File:  
File Name . . . . \_\_\_\_\_

Initial Macro . . . . \_\_\_\_\_  
Profile Name . . . . \_\_\_\_\_  
Format Name . . . . \_\_\_\_\_  
Data Set Password . . . . \_\_\_\_\_

Command ====> \_\_\_\_\_  
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9= Swap  
F10=Actions F12=Cancel

# ISPF Option 1 VIEW

**Primary 1**  
View Entry Panel

Menu RefList RefMode Utilities Workstation Help

View Entry Panel More

**ISPF Library**

Project . . . \_\_\_\_\_  
Group . . . . . \_\_\_\_\_ . . . . . \_\_\_\_\_ . . . . . \_\_\_\_\_  
Type . . . . . \_\_\_\_\_  
Member . . . . . \_\_\_\_\_ (Blank or pattern for member...)

**Other Partitioned or Sequential Data Set**

Data Set Name . . . . . \_\_\_\_\_  
Volume Serial . . . . . \_\_\_\_\_ (If not cataloged)

Workstation File:  
File Name . . . . . \_\_\_\_\_

Initial Macro . . . . . \_\_\_\_\_  
Profile Name . . . . . \_\_\_\_\_  
Format Name . . . . . \_\_\_\_\_  
Data Set Password . . . . . \_\_\_\_\_

Enter

Command ====> \_\_\_\_\_

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9= Swap  
F10=Actions F12=Cancel

# ISPF Option 1

## VIEW

**Primary** **21**  
Member Selection List

Menu Functions Utilities Help

EDIT MFM3984.PAYROLL.COBOL Row 00000 of 00008

Name	VV	MM	Created	Changed	Size	Init	Mod	ID
. PAY1	01	23	95/07/23	99/08/05 12:24	432004	70	0	MFM3984
. PAY2A	01	08	92/08/23	98/10/14 16:23	937421	2	0	MFM3984
. PAY31	01	14	95/12/01	98/04/24 16:30	29384	12	0	MFM3984
. PAY34	01	07	96/02/27	99/05/22 09:13	293484	10	0	MFM3984
. PAY35	01	13	95/12/23	99/08/05 12:24	432004	55	0	MFM3984
. PAY36	01	08	92/08/23	97/10/14 16:23	937421	2	0	MFM3984
. PAY31	01	24	95/02/01	98/11/24 12:30	29384	14	0	MFM3984
. PAY34	01	07	96/05/26	99/05/22 09:13	693484	10	0	MFM3984

\*\*End \*\*

select members  
using dots or typing  
S in the left column

← scroll →

F7 F8

Command ====> Scroll ==> PAGE

F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9= Swap

F10=Actions F12=Cancel

# ISPF Option 1 VIEW

The screenshot displays the ISPF Option 1 VIEW screen. At the top right, it says "Primary 21" and "Browse Panel". Below this is a menu bar with options: File, Edit, Confirm, Menu, Utilities, Compilers, Text, Help. The main area shows a COBOL program listing for "MPM3984.PAYROLL.COBOL(PAY2)". The current position is at line 000100. The data set name is "MPM3984.PAYROLL.COBOL(PAY2)". The columns are set to 00001 00080. The program listing shows the following text:

```
000100 IDENTIFICATION DIVISION.
000200 PROGRAM-ID.      PAY2A
000300 AUTHOR.           M JONES.
000400 INSTALLATION.     ACME BEARING.
000500 DATE-WRITTEN.     JAN. 1999
000600 DATE-COMPILED.
000700
000800
000900 THIS IS ONE OF A SERIES OF PROGRAMS THAT COMPRISE
001000 THE COMPANY PAYROLL PACKAGE.
001100
001200 THIS PROGRAM MERGES COMPANY BENEFIT AND WITHOLDING
001300 INFORMATION SENT IN FROM SATELLITE LOCATIONS WITHIN
001400 THE FOUR MANUFACTURING DIVISIONS.  A REFERENCE FILE
001500 IS LOADED DYNAMICALLY AT RUN TIME WHICH PROVIDES
001600 INFORMATION FOR TRANSACTION EDITS AS WELL AS ALL
001700 APPLICABLE STATE AND LOCAL TAX RATES.
001800
001900 THIS PROGRAM IS UPDATED AS NECESSARY TO ACCOMODATE
```

Annotations on the screen include:

- "Data set name" pointing to the program name in the header.
- "Current position" pointing to the line number 000100.
- "22 lines" indicating the total number of lines in the program.

At the bottom, there is a command line with "Command ==>" and "Scroll ==> PAGE". Below this are function key definitions: F1=Help, F3=Exit, F5=Rfind, F6=Rchange, F12=Cancel.



# Option 2

## EDIT

### How to start an edit session

- To display the Edit Entry panel, select option 2 (Edit) from the Primary Option Menu.
- To edit a member of a partitioned data set, enter the names of the data set and member and press Enter.
- If the member you specify already exists, its contents are displayed in the edit data display.
- If the member doesn't exist, the edit data display is blank.
- ISPF uses the data set type to determine the *edit profile* it uses.
- The edit profile contains settings such as the number of columns in the editing area, the type of numbering that's used, the tab settings, and whether recovery mode is on or off.

# The Edit Entry panel

Mma - EXTRA! for Windows 98 / Windows NT

File Edit View Tools Session Options Help

Menu RefList RefMode Utilities LMF Workstation Help

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Edit Entry Panel

Command ==> \_\_\_\_\_

ISPF Library:

Project . . . MM01

Group . . . TEST . . . \_\_\_\_\_

Type . . . COBOL

Member . . . CALC1000 (Blank or pattern for member selection list)

Other Partitioned, Sequential or VSAM Data Set:

Data Set Name . . . \_\_\_\_\_

Volume Serial . . . \_\_\_\_\_ (If not cataloged)

Workstation File:

File Name . . . . . \_\_\_\_\_

Options

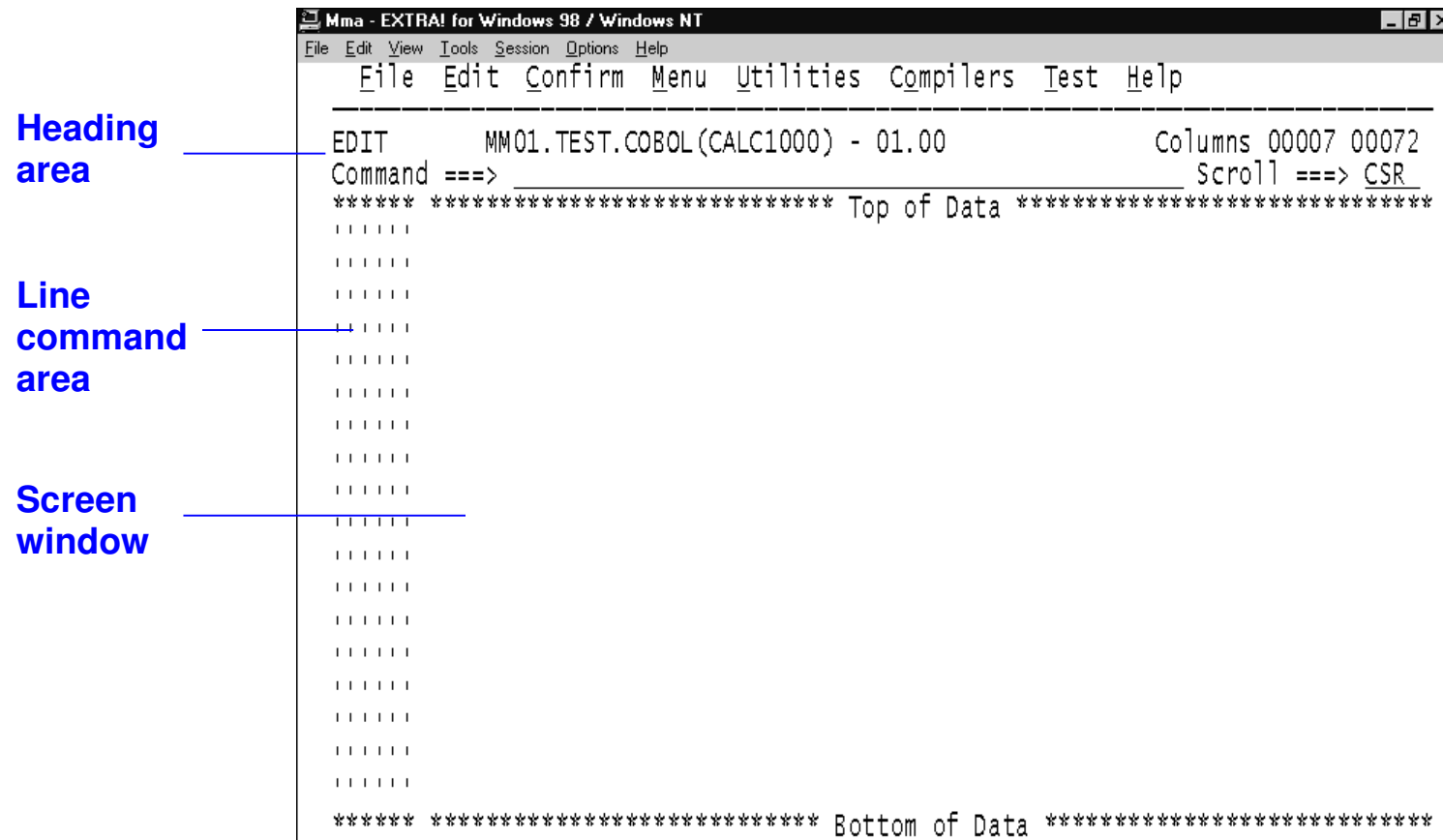
Initial Macro . . . . . \_\_\_\_\_ / Confirm Cancel/Move/Replace

Profile Name . . . . . \_\_\_\_\_ - Mixed Mode

Format Name . . . . . \_\_\_\_\_ - Edit on Workstation

Data Set Password . . . . . \_\_\_\_\_ - Preserve VB record length

# The edit data display for a new data set



## How to work in the edit data display

- The first line of the *heading area* identifies the file being edited and the leftmost and rightmost columns where editing is allowed.
- The second line of the heading area contains a command area where you can enter *primary commands* and a scroll field where you can indicate the scroll amount.
- In the *line command area*, you can enter *line commands* that affect specific lines.
- The *screen window* is where the data for the member you're editing is displayed.

## How to start a new member from an existing one

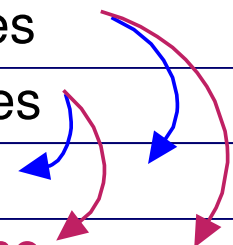
- Enter the COPY command in the command area and press Enter. Then, identify the existing member in the panel that's displayed.

## Common scroll settings

Setting	Function
PAGE	Scrolls a whole page of data.
HALF	Scrolls half a page of data.
CSR	Scrolls to the line or column where the cursor is positioned.

# ISPF Edit Panel - some line commands

Command	Description
I	Insert lines
D	Delete lines
R	Repeat lines
C	Copy lines
M	Move lines
A	After line
B	Before line
(	Shift right columns
<	Shift right data
)	Shift left columns
>	Shift left data
X	Exclude lines



# ISPF Edit Panel - Inserting lines

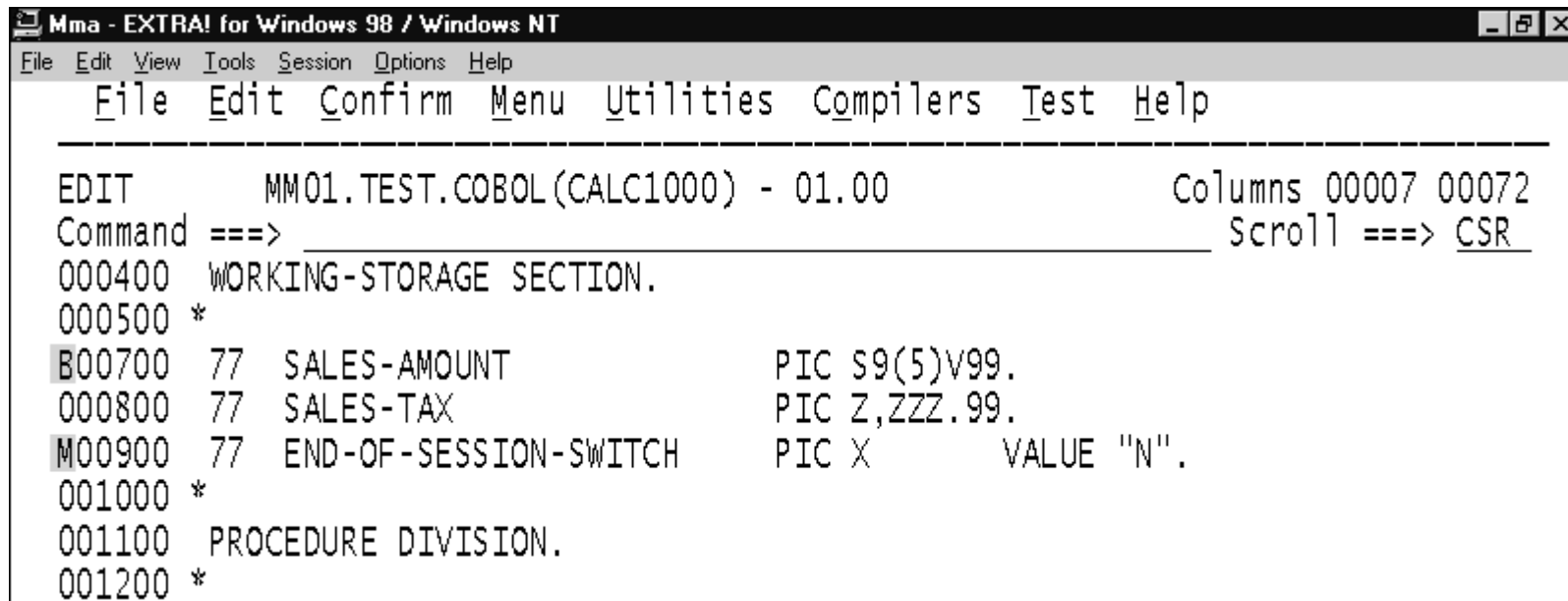
## Screen 1

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
ISREDDE2 MIRIAM.PRIVATE.JCLLIB(ABC1) - 01.03 Columns 00001 00072
Command ==> Scroll ==> PAGE
***** Top of Data *****
i50100 PROC 0 DB
000200 IF &DB = .DB THEN +
***** Bottom of Data *****
```

## Screen 2

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
ISREDDE2 MIRIAM.PRIVATE.JCLLIB(ABC1) - 01.03 Columns 00001 00072
Command ==> Scroll ==> PAGE
***** Top of Data *****
000100 PROC 0 DB
.....
..... -
.....
.....
.....
000200 IF &DB = .DB THEN +
***** Bottom of Data *****
```

## The edit data display with M and B line commands



The screenshot shows a window titled "Mma - EXTRA! for Windows 98 / Windows NT". The menu bar includes File, Edit, View, Tools, Session, Options, and Help. Below the menu bar, there is a secondary menu with File, Edit, Confirm, Menu, Utilities, Compilers, Test, and Help. The main text area displays COBOL code for a program named MM01.TEST.COBOL. The code includes a WORKING-STORAGE SECTION with variables SALES-AMOUNT, SALES-TAX, and END-OF-SESSION-SWITCH, followed by a PROCEDURE DIVISION. The line numbers 000400 through 001200 are visible on the left. The status bar at the bottom indicates "Columns 00007 00072" and "Scroll ==> CSR".

```
EDIT      MM01.TEST.COBOL(CALC1000) - 01.00          Columns 00007 00072
Command ==> _____ Scroll ==> CSR
000400  WORKING-STORAGE SECTION.
000500  *
000700  77  SALES-AMOUNT          PIC S9(5)V99.
000800  77  SALES-TAX            PIC Z,ZZZ.99.
000900  77  END-OF-SESSION-SWITCH PIC X          VALUE "N".
001000  *
001100  PROCEDURE DIVISION.
001200  *
```



## Basic line commands

I/In	Insert 1 or n lines following this line.
D/Dn/DD	Delete this line, n lines beginning with this line, or the block of lines beginning and ending with DD.
R/Rn/RR/RRn	Repeat this line or the block of lines beginning and ending with RR 1 or n times.
C/Cn/CC	Copy this line 1 or n times, or copy the block of lines beginning and ending with CC.
M/Mn/MM	Move this line 1 or n times, or move the block of lines beginning and ending with MM.
A/An	Copy or move lines 1 or n times after this line.
B/Bn	Copy or move lines 1 or n times before this line.

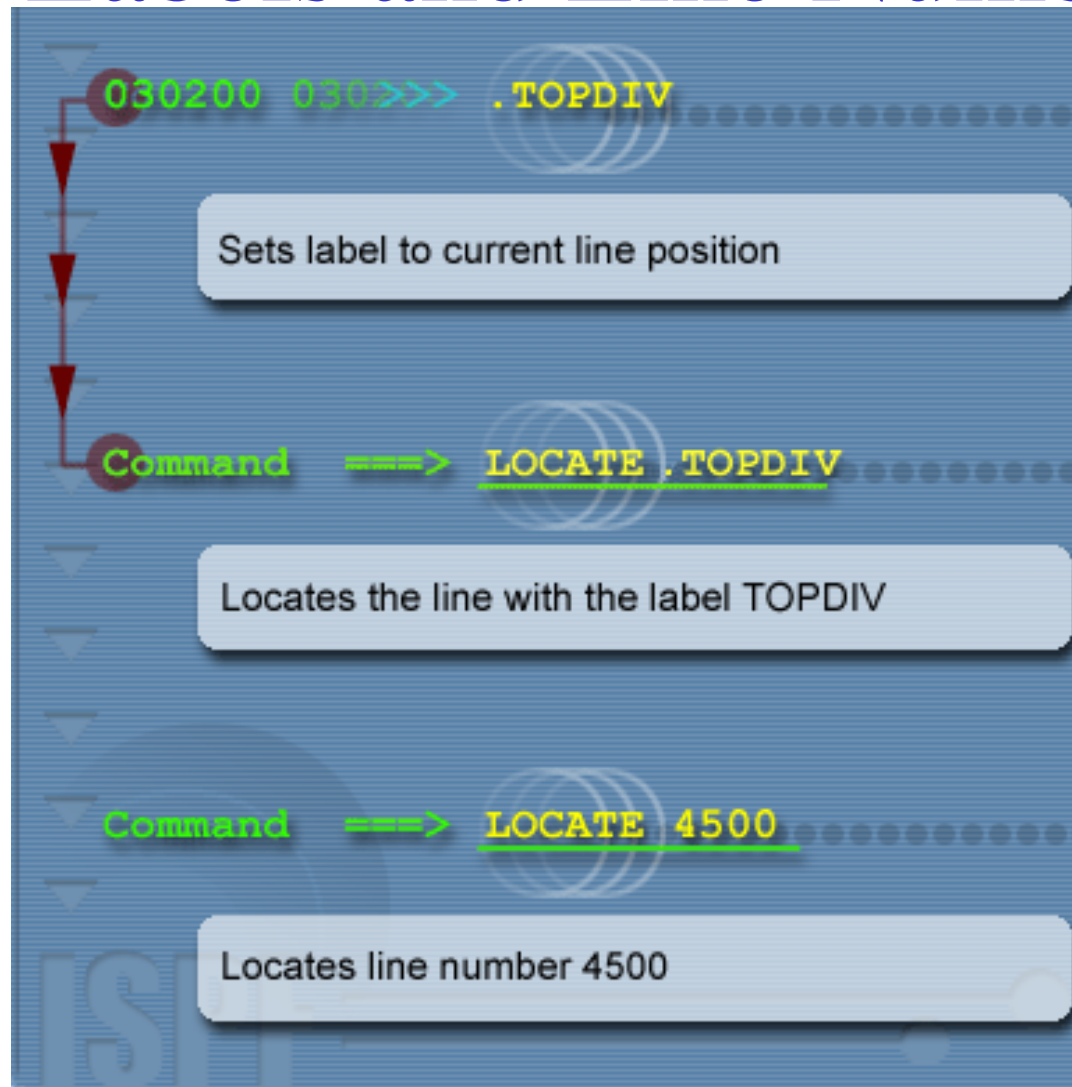
# ISPF Edit Panel - Scrolling Commands

- Scrolling functions let you specify both the direction and amount you move as you peruse the data. PF7 and PF8 move the window up and down respectively. PF10 and PF11 move it left and right.
- You may specify the amount of the scroll by entering a value in the SCROLL field at the lower right hand side. The default value is HALF. This means that when you press any of the function keys mentioned above, the window moves a half page in the direction desired. Possible values are shown below.
- HALF - Move the screen window half a page (11 lines or 40 columns).
- PAGE - Move the screen window one page (22 lines or 80 lines).

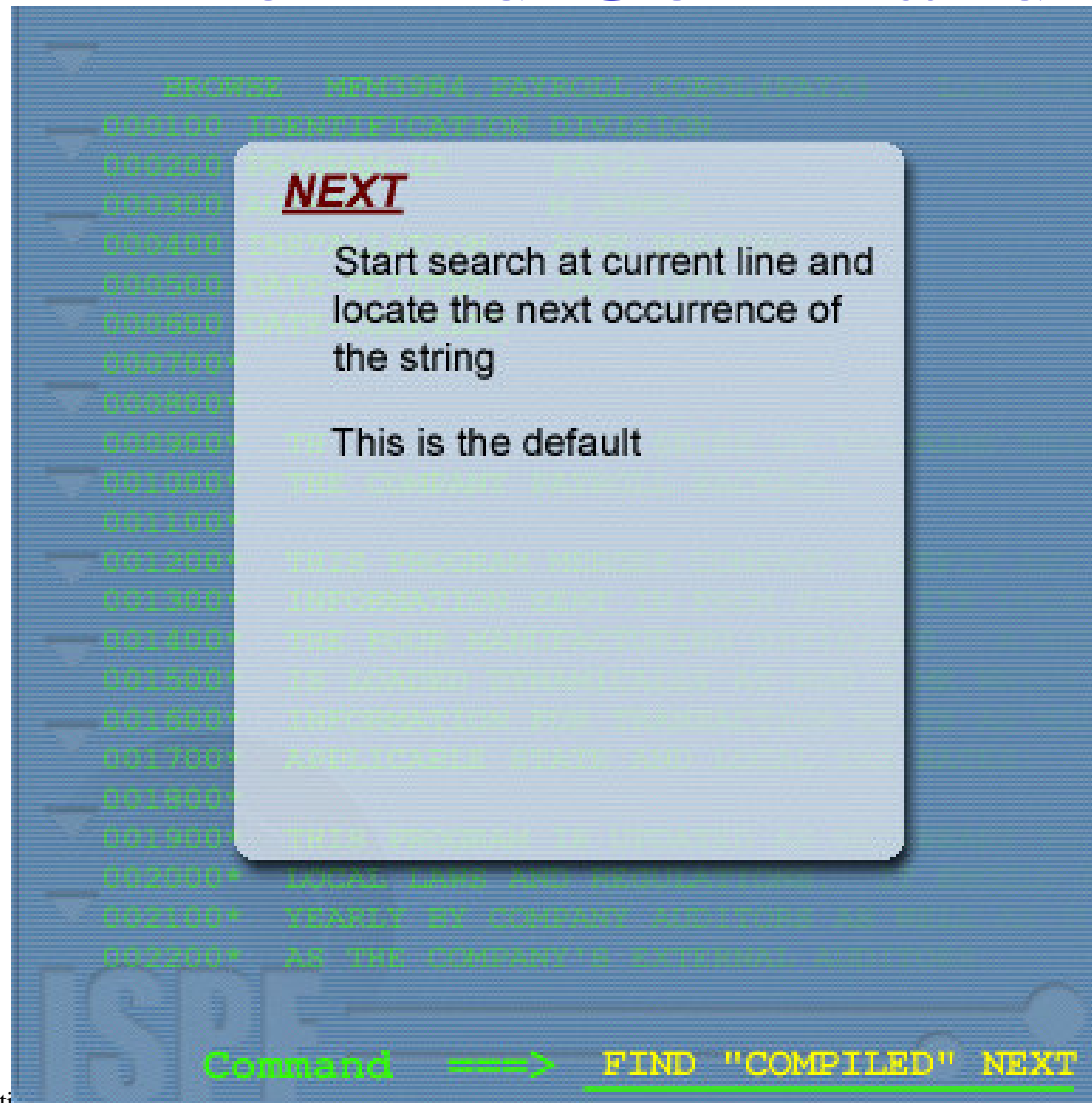
# ISPF Edit Panel - Scrolling Commands

- N - Move the screen window n lines or columns.
- MAX - Move the screen window to top, bottom, left, or right margin.
- CSR - Move the screen window so data at the current cursor position ends up at the top, bottom, left, or right of the screen.
- DATA - Move the screen window one line or column less than a full page

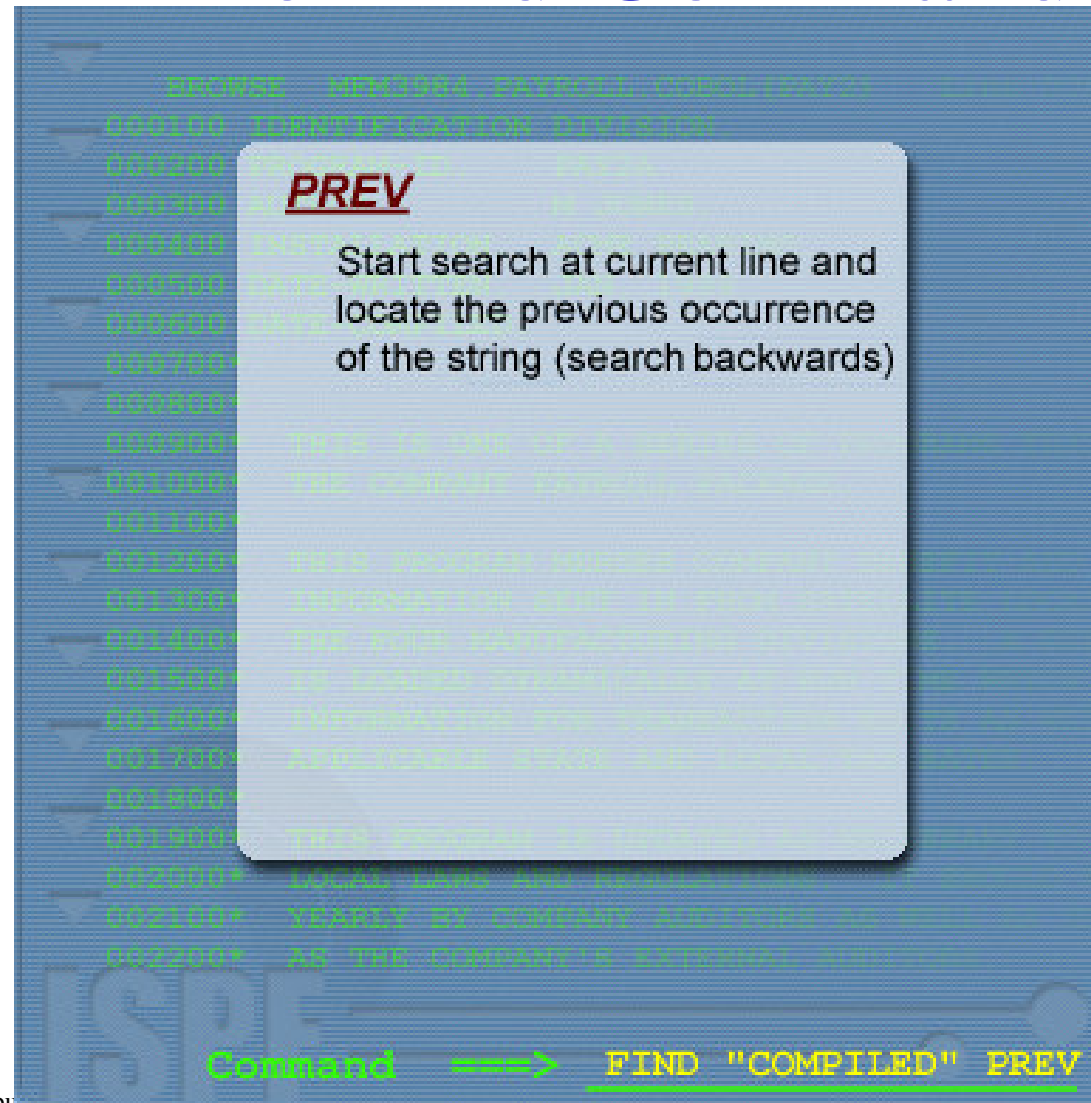
# ISPF Edit Panel - Labels and Line Numbers



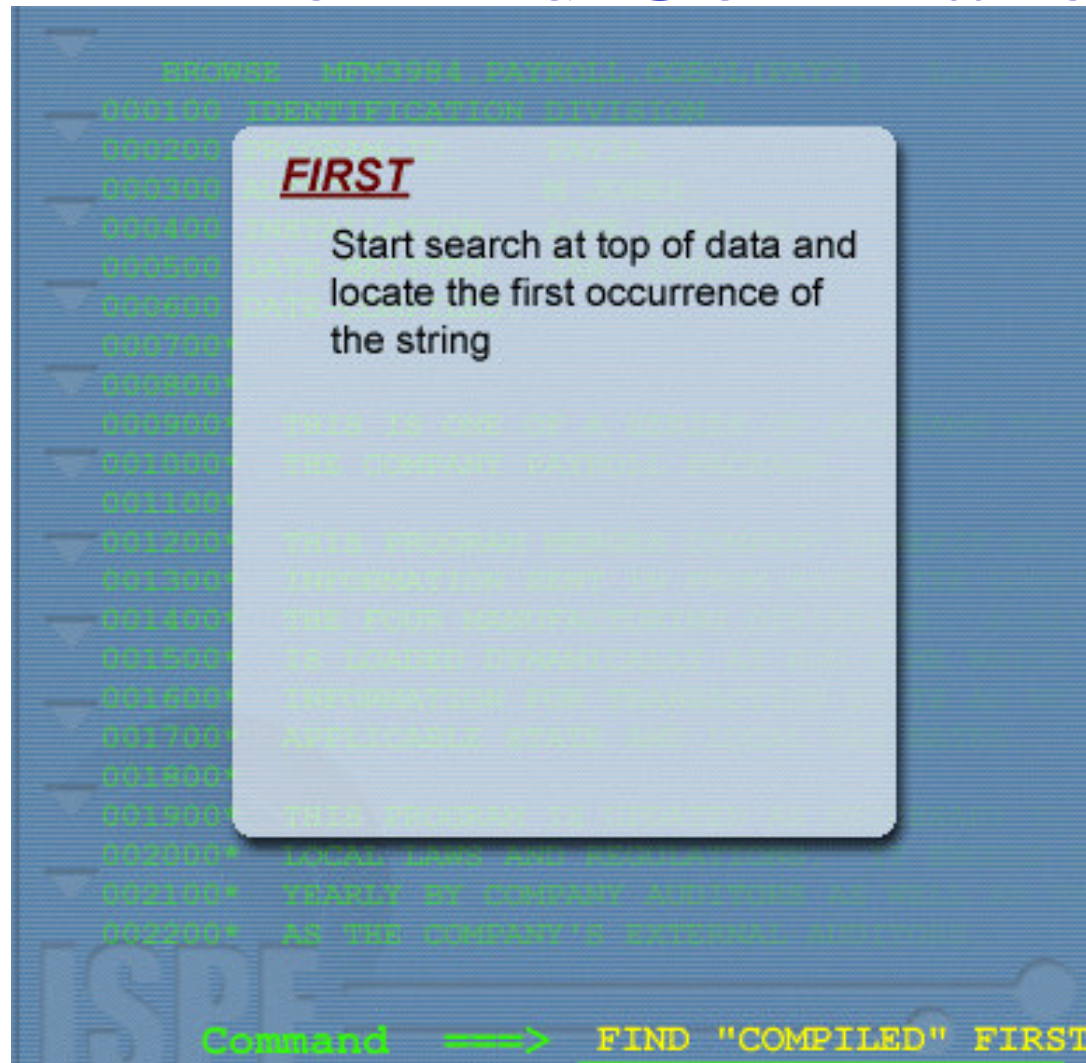
# ISPF Edit Panel - The Find Command



# ISPF Edit Panel - The Find Command

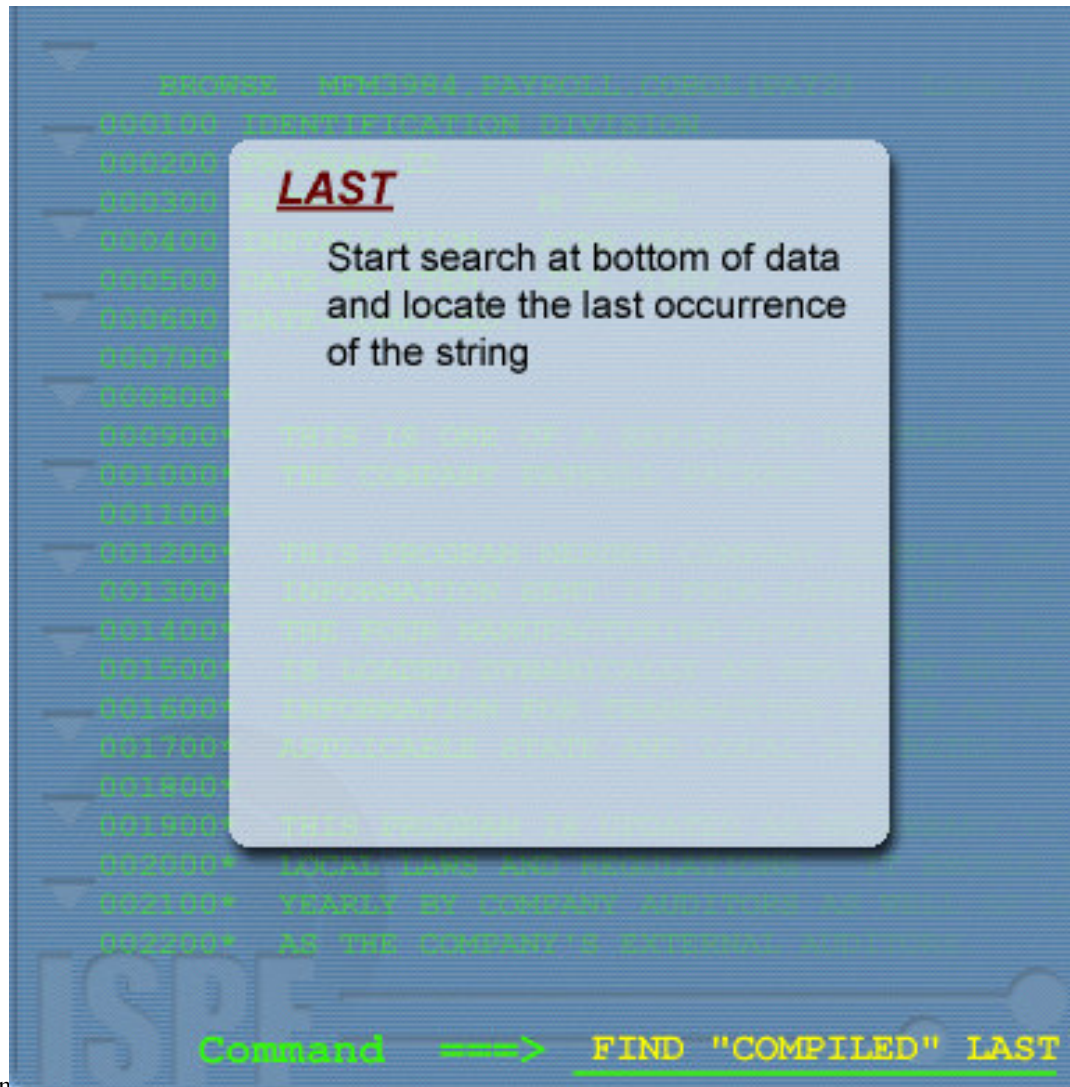


# ISPF Edit Panel - The Find Command



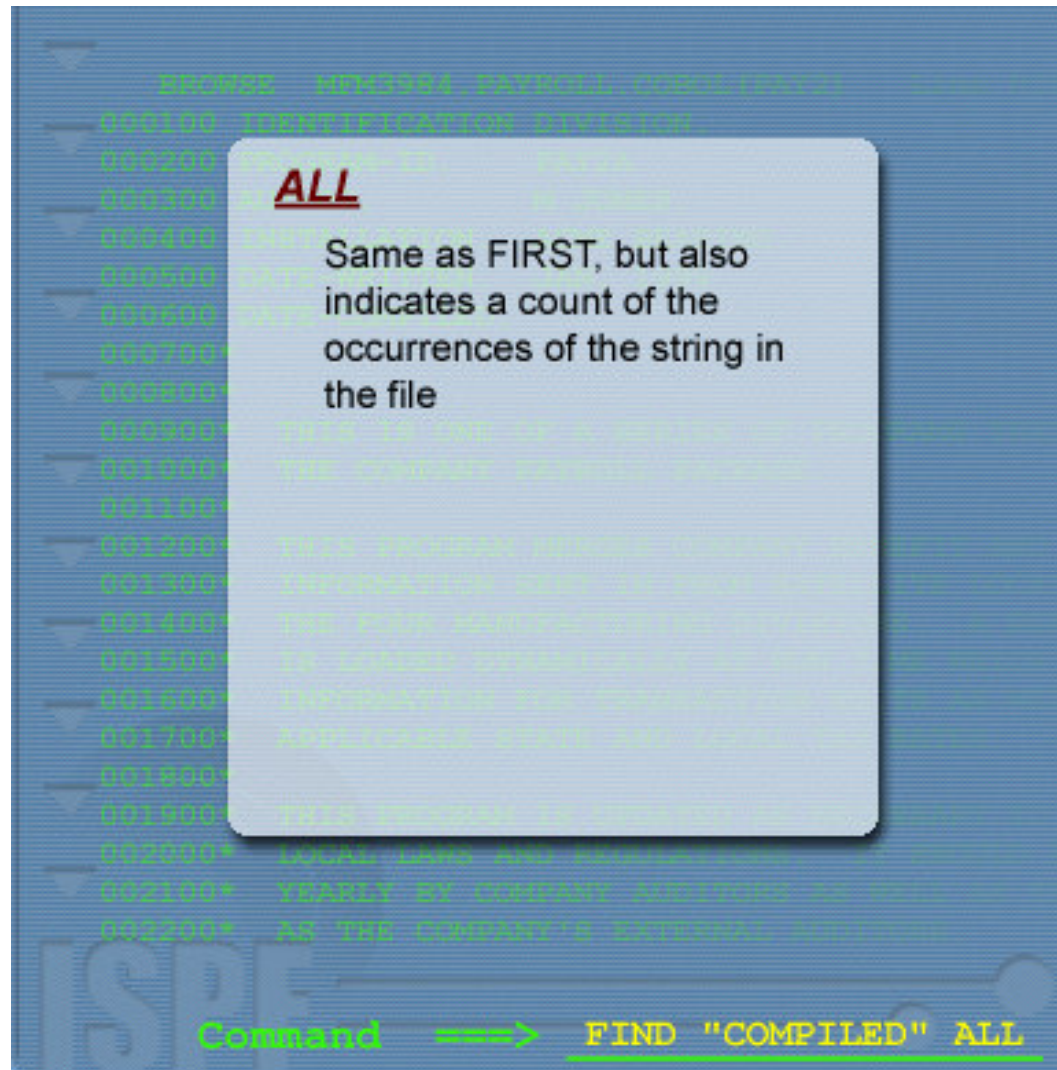


# ISPF Edit Panel - The Find Command





# ISPF Edit Panel - The Find Command



# Reviewing Useful Commands

LOCATE <i>line-number</i>	Moves to the indicated line.
FIND <i>string</i>	Finds the first occurrence of <i>string</i> , starting from the current line. Press PF5 to find the next occurrence.
CHANGE <i>string-1 string-2</i> [ALL]	Finds the first occurrence of <i>string-1</i> , starting from the current line, and changes it to <i>string-2</i> . Press PF5 to find the next occurrence, and PF6 to change it. To change all occurrences, include ALL.
COPY <i>member-name</i>	Retrieves data from the specified member; use an A or B line command to specify where the data should be placed.
PROFILE	Displays the profile settings for the edit session.
RECOVERY [ON OFF]	Determines whether edit recovery mode is on.
UNDO	Reverses the last editing change.
SAVE	Saves changes and continues the edit session.
END (PF3/15)	Saves changes and returns to the Edit Entry panel.
RETURN (PF4/16)	Saves changes and returns to the Primary Option Menu.
CANCEL	Returns to the edit entry panel without saving changes.